CLAIMS

WHAT IS CLAIMED IS:

1. A bioadhesive composition comprising pullulan, pyruvate, an antioxidant, and a mixture of saturated and unsaturated fatty acids adapted to resuscitate injured mammalian cells.

2. The composition according to claim 1, wherein said pyruvate is selected from the group consisting of pyruvic acid, lithium pyruvate, sodium pyruvate, potassium pyruvate, magnesium pyruvate, calcium pyruvate, zinc pyruvate, manganese pyruvate, methyl pyruvate, α-ketoglutaric acid, pharmaceutically acceptable salts of pyruvic acid, prodrugs of pyruvic acid, and mixtures thereof.

3. The composition according to claim 2, wherein said pyruvate is sodium pyruvate.

4. The composition according to claim 1, wherein said antioxidant is selected from the group consisting of all forms of Vitamin A; all forms of carotene; all forms of Vitamin C; all forms of Vitamin E; Vitamin E esters which readily undergo hydrolysis to Vitamin E; prodrugs of Vitamin A, carotene, Vitamin C, and Vitamin E; pharmaceutically acceptable salts of Vitamin A, carotene, Vitamin C, and Vitamin E; and mixtures thereof.

5. The composition according to claim 4, wherein said antioxidant is Vitamin E acetate.

6. The composition according to claim 1, wherein said mixture of saturated and unsaturated fatty acids comprises animal and vegetable fats and waxes.

7. The composition according to claim 6, wherein said mixture of saturated and unsaturated fatty acids is selected from the group consisting of human fat, chicken fat, cow fat, sheep fat, horse fat, pig fat, and whale fat.

8. The composition according to claim 7, wherein said mixture of saturated and unsaturated fatty acids comprises lauric acid, myristic acid, myristoleic acid, pentadecanoic acid, palmitic acid, palmitoleic acid, margaric acid, margaroleic acid, stearic, oleic acid, linoleic acid, linolenic acid, arachidic acid, and gadoleic acid.

9. The composition according to claim 1, wherein said pullulan is present in an amount of about 0.1 to about 80 wt.%.

10. The composition according to claim 1, wherein said pyruvate is present in an amount of about 10 to about 50 wt.%.

11. The composition according to claim 1, wherein said antioxidant is present in an amount of about 0.1 to about 40 wt.%.

12. The composition according to claim 1, wherein said mixture of saturated and unsaturated fatty acids is present in an amount of about 10 to about 50 wt.%.

13. The composition of claim 1, further comprising polymyxin B sulfate, bacitracin zinc, and neomycin sulfate.

14. The composition of claim 13, wherein said polymyxin B sulfate is present in an amount of about 1000 to about 15,000 units/gm, the bacitracin zinc is present in an amount of about 100 to about 1,500 units/gm, and the neomycin sulfate is present in an amount of about 1 to about 15 mg/gm.

15. The composition of claim 14, wherein said pullulan is present in an amount of about 40 to about 80 wt.%, said pyruvate is present in an amount of about 10 to about 50 wt.%, said antioxidant is present in an amount of about 0.1 to about 40 wt.%, and said mixture of saturated and unsaturated fatty acids is present in an amount of about 10 to about 50 wt.%.

16. The composition of claim 1, further comprising an antimicrobially effective amount of at least one essential oil selected from the group consisting of thymol, methyl salicylate, eucalyptol and menthol.

17. The composition of claim 16, comprising about 40 to about 80 wt.% pullulan, about 10 to about 50 wt.% of said pyruvate, about 0.1 to about 40 wt.% of said antioxidant, about 10 to about 50 wt.% of said mixture of saturated and unsaturated fatty acids, about 0.1 to about 4 wt.% thymol, about 0.1 to about 4 wt.% methyl salicylate, about 0.1 to about 4 wt.% eucalyptol, about 0.1 to about 15 wt.% menthol, and about 0.1 to about 5 wt.% copper gluconate.

18. The composition of claim 1, further comprising about 0.01 to about 5 wt.% of at least one stabilizing agent, 0 to about 0.1 wt.% of at least one of at least one coloring agent, about 0.1 to about 8 wt.% of water, 0 to about 15 wt.% of at least one sweetening agent, 0 to about 15 wt.% of at least one flavoring agent, 0 to about 4 wt.% of at least one cooling agent, and about 0.1 to about 5 wt.% of at least one surfactant.

19. The composition of claim 18, wherein said least one stabilizing agent is selected from the group consisting of xanthan gum, locust bean gum and carrageenan, said at least one sweetening agent is selected from the group consisting of saccharin,

aspartame and acesulfame K, said at least one cooling agent is physcool, and said at least one surfactant is selected from the group consisting of Polysorbate 80 and Atmos 300.

20. The composition of claim 1, in a form of a film that does not substantially adhere to itself.

21. The composition of claim 1, free of glycerin and sorbitol.

22. The composition of claim 1, free of humectants.

23. The composition of claim 1, wherein a total oil content of said composition is at least about 15 wt.%.

24. The composition of claim 1, wherein a total moisture content of said composition is about 3 wt.% to about 8 wt.%.

25. A method for treating a wound, said method comprising applying to said wound a composition according to claim 1.

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